Weber, Hayes & Associates
Hydrogeology and Environmental Engineering
120 Westgate Dr., Watsonville, CA 95076
(831) 722-3580 (831) 662-3100
Fax: (831) 722-1159

Transmittal Letter

to: **Ms. Judy Cox**
C&N Tractors
21389 Boyle Road
Palo Cedro, CA 96703

from: **Pat Hoban**

date: **June 2, 2006**

Number of Copies	*Date of Documents*	*Description*
1	June 2, 2006	Proper Destruction of Monitoring Wells C&N Tractors, 496 Salinas Rd., Watsonville (Pajaro) California

Cc: John Goni
R. Fernandez

Weber, Hayes and Associates
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June 2, 2006
22029.Q

Ms. Judy Cox
C&N Tractors
21389 Boyle Road
Palo Cedro, California 96703

Subject: Proper Destruction of Monitoring Wells
C & N Tractors, 496 Salinas Road, Watsonville (Pajaro), California

This brief letter report confirms the proper destruction of four groundwater monitoring wells (MW-1 through 4), formerly located at 496 Salinas Road (Figures 1 and 2). The monitoring wells were initially installed to determine depth to groundwater, hydraulic gradient, and groundwater quality with respect to monitoring the dissolved hydrocarbon plume beneath the site. These wells were properly destroyed in accordance with State and Local standards as part of fuel leak investigation closure requirements issued by the California Regional Water Quality Control Board (Regional Board)[1]. It is our understanding that a no further action letter will be issued pending Regional Board review of this *Well Destruction Report.* Copies of the approved well destruction permits are included in Appendix A.

On May 22nd, with oversight from Weber, Hayes and Associates (WHA), the wells were properly destroyed according to Department of Water Resources Bulletin Nos. 74-81 and 74-90, Porter Cologne Water Quality Act Sections 13710 through 13755, and Monterey County Environmental Health Division Requirements. Well destruction operations were completed by Exploration Geoservices, (C-57 License No. 484-288). Prior to destroying each well, the wells depth to groundwater and total depth was measured to confirm there were no obstructions in the well column (field sheets included in Appendix B). Once confirmed, well destruction operations commenced.

Pressure Grout: For those wells with an annular seal greater than 20' below ground surface (bgs; i.e. MW-2 and 4), each well was tremie grouted with neat cement from bottom of the well upward in one continuous pour, ensuring the annular space and casing for the well was completely sealed and free of any voids or bridges of the sealing material. Once grouted, the well was placed under approximately 30 pounds per square inch (psi) pressure for approximately 5 minutes. Thereafter, the sealing material was checked for drop or decline and additional portland cement was added as needed. The volume of grout going into each well was calculated to meet the volume required to completely seal the annular space and the well casing to ground

[1] Regional Board letter; *UST: C&N Tractors, 496 Salinas Road, Watsonville (Pajaro), Monterey County; Case Closure Approval, Case # 675,* dated March 27, 2006.

surface. Following pressure grout operations each well was drilled out to 5' bgs, and subsequently backfilled with native soils and/or neat cement.

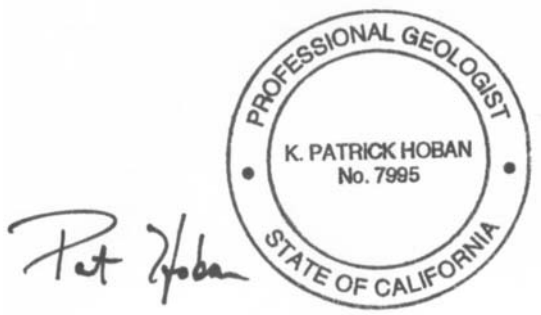
Drill Out: For those wells having an annular seal less than 20' bgs (i.e. MW-1 and 3), each well casing, annular seal, and sand-pack were drilled out using a hollow stem auger drill rig. Following this procedure, the subsequent borehole was completely filled with neat cement in one continuous pore from the base of the borehole to ground surface. The removed debris (i.e. casing and annular material) was disposed of in on-site trash receptacles. Soil cuttings generated during this procedure were containerized in a DOT approved 55-gallon drum on-site and will be off-hauled and disposed of by a licensed hauler subsequent soil characterization.

It is our opinion that the destruction of the 4-well monitoring network completes the fuel leak investigation at this site. If there are any questions regarding any aspect of this project, please contact us at our office.

Sincerely,

Weber, Hayes and Associates

By: And:



Josh Hannaleck
Staff Engineer

Pat Hoban, PG. #7995
Senior Geologist

cc: **Mr. John Goni**
California Regional Water Quality Control Board
Central Coast Region
895 Aerovista Place, Suite 101
San Luis Obispo, California 93401 - 7906

Mr. Robert B. Fernandez
Monterey County Health Department
Division of Environmental Health
1270 Natividad Road, Room 301
Salinas, California 93906

Attachments:

Figure 1: Location Map
Figure 2: Groundwater Monitoring Results (Monitoring Well Locations)

Appendix A: Well Destruction Permits
Appendix B: Well Destruction Field Sheets

REFERENCES

California Regional Water Quality Control Board - Central Coast Region Correspondence: UST: C & N Tractors, 496 Salinas Road, Watsonville (Pajaro), Monterey County:

Notice of Responsibility & Request for Investigation, October 4, 2002.

Response to Work Plan, May 22, 2003.

Response to Work Plan, September 27, 2004.

Response to Well Installation and Sampling Report (RWQCB Case 3675), March 18, 2005.

Weber Hayes and Associates Reports for C & N Tractors, 496-498 Salinas Road, Watsonville,:

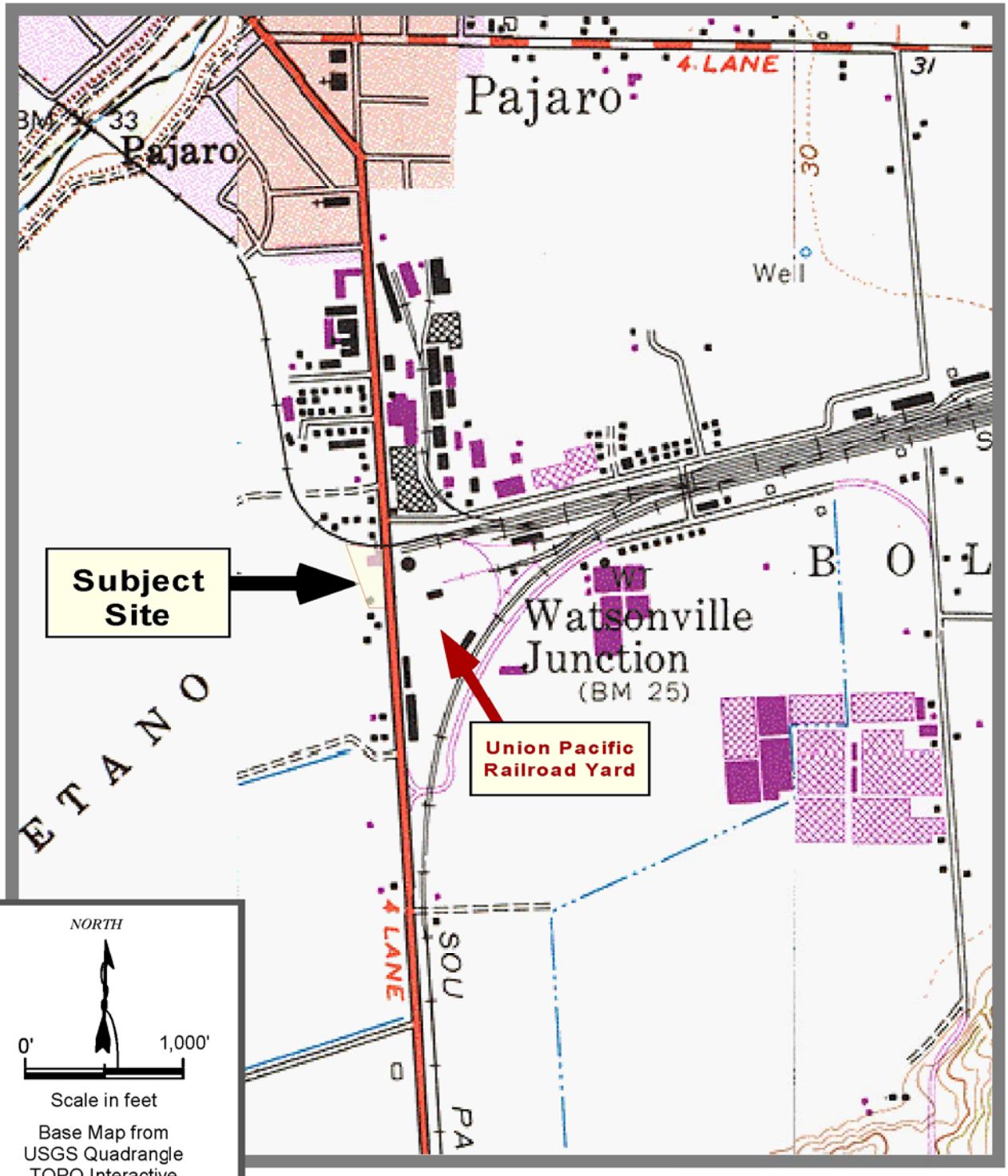
Phase I & II Environmental Site Assessment, April 14, 1997.

Workplan for Soil and Groundwater Characterization, April 11, 2003.

Summary Report: Shallow Soil and Groundwater Assessment Report, and
Workplan: Installation of a Shallow Groundwater Monitoring Network, October 3, 2003.

Monitoring Well Installation, Development, and Sampling Report, March 9, 2005.

Semi-Annual Groundwater Monitoring Report - Spring 2005, May 3, 2005.



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Location Map
C&N Tractors
496-498 Salinas Road
Watsonville, California

FIGURE 1
Job # 22029

Explanation

MW-4
Elevation: 258.55'
TPH-g: 76,000 ppb
B: 23,000 ppb
T: 1,600 ppb
E: 1,600 ppb
X: 1,100 ppb
MTBE: *< 3 ppb
D.O.: 0.06 ppm

Groundwater Monitoring Well (MW) location, designation, groundwater elevation, and analytical results

Analytical Results are in ug/L, parts per billion (ppb)
Samples Analyzed for:
Total Petroleum Hydrocarbons as Gasoline (TPH-g),
Benzene (B),
Toluene (T),
Ethylbenzene (E),
Xylenes (X),
Methyl Tert Butyl Ether (MTBE)

Dissolved Oxygen (D.O.) was measured in the field and is presented in mg/L, parts per million (ppm)
* = Laboratory indicates results possiby aged gasoline.
< X = Analyte not detected above laboratory detection limit, X

21.2'

Groundwater elevation contours, and flow direction.

Groundwater gradient measured on October 19, 2005 was 0.001 ft/ft to the southwest.

Notes: Monitoring well MW-1 was installed in 1987. Monitoring wells MW-2, 3, & 4 were installed on January 25, 2005. Well elevations were professionally surveyed by McGregor Land Surveys on February 16, 2005, License # 5946.

Railroad Tracks

Property Line

Salinas Road

Tractor Sales & Office

Agricultural Fields

Asphalt Lot
Open Air Tractor Storage

Access Roads

Repair Shop

Paint Shop

Parts & Storage

Fabrication Shop

MW-1
Elevation: 17.30'
TPH-g: 60 ppb
B: ND
T: ND
E: ND
X: ND
MTBE: ND
D.O.: 0.14 ppm

Former Underground Gas Tank
(550-gallon, Removed: April 1987)

MW-2
Elevation:17.31'
TPH-g: ND
B: ND
T: ND
E: ND
X: ND
MTBE: ND
D.O.: 0.12 ppm

MW-3
Elevation:17.20'
TPH-g: ND
B: ND
T: ND
E: ND
X: ND
MTBE: ND
D.O.: 0.16 ppm

MW-4
Elevation:17.15'
TPH-g: ND
B: ND
T: ND
E: ND
X: ND
MTBE: 11 ppb
D.O.: 0.12 ppm

17.3'
17.25'
17.2'
17.15'
17.3'
17.25'
17.15'
17.2'

NORTH
0'
50'
Approximate Scale in feet
Base Map from
Aerial Photo

Active Fuel Leak Site
(former railroad yard)
8 Groundwater Monitoring Wells

22029.C&N\QM\QM2005\4q05\Site map 4q05.cnv

FIGURE 2
Job # 22029

Groundwater Monitoring Results
October 19, 2005
C&N Tractors
496-498 Salinas Road
Watsonville, California

Weber, Hayes & Associates
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APPENDIX A

Well Destruction Permits

MONTEREY COUNTY HEALTH DEPARTMENT
DIVISION OF ENVIRONMENTAL HEALTH
A CERTIFIED UNIFIED PROGRAM AGENCY
• 1270 Natividad Rd., Room B 301. Salinas CA 93906 (831) 755-4511

MONITORING WELL PERMIT

PERMIT NO: HZ-2034 MW-1

(MCEH use only: **SR0001187**)

☒-MONITORING WELL ☐-CONSTRUCTION

☐-VAPOR EXTRACTION WELL ☒-DESTRUCTION

SITE LOCATION: *496 Salinas Road, Pajaro CA*
APN #: *117-271-010*

SITE CONTACT PERSON: Judy Cox/Nigel Madison ***PHONE:*** (831) 728-2520	***CONSULTANT:*** Weber, Hayes, and Associates 120 Westgate Dr Watsonville, CA 95076 ***PHONE:*** (831) 722-3580
OWNER: Judy Cox 21389 Boyle Rd Palo Cedro, CA 96703 ***PHONE:*** (831) 728-2520	***DRILLER:*** Exploration Geo 1535 Industrial Ave San Jose, CA 95122 ***LICENSE #: C-57*** 484288 ***PHONE:*** (408) 280-6822

CONDITIONS:

SITE PLAN SHALL BE TO SCALE.

NOTIFY THE HEALTH DEPARTMENT 48 HOURS PRIOR TO THE TIME YOU EXPECT TO START WORK ON CONSTRUCTION OR DESTRUCTION OF ANY TYPE OF WELL.

COMPLETE DESTRUCTION IS REQUIRED FOR ALL WELLS INCLUDING SOIL BORING, SPARGING AND EXTRACTION WELLS (PER CA WATER WELL BULLETIN 74-81 SUPPLEMENT 74-90 AND THE MONTEREY COUNTY HEALTH DEPARTMENT REQUIREMENTS FOR THE DESTRUCTION OF MONITORING WELLS AND EXPLORATORY BORINGS).

DATE ISSUED: 5/10/06 ***EXPIRATION DATE:*** 5/10/07

ISSUED BY: _____

Bruce Welden, REHS, REA
Supervising Hazardous Materials Specialist

(Rev. 1/04)

MONTEREY COUNTY HEALTH DEPARTMENT
DIVISION OF ENVIRONMENTAL HEALTH
A CERTIFIED UNIFIED PROGRAM AGENCY
• 1270 Natividad Rd., Room B 301, Salinas CA 93906 (831) 755-4511

MONITORING WELL PERMIT

PERMIT NO: HZ-2035 MW-2

(MCEH use only: **SR0001187**)

☒-MONITORING WELL ☐-CONSTRUCTION

☐-VAPOR EXTRACTION WELL ☒-DESTRUCTION

SITE LOCATION: *496 Salinas Road, Pajaro CA*
APN #: *117-271-010*

SITE CONTACT PERSON: Judy Cox/Nigel Madison ***PHONE:*** (831) 728-2520	***CONSULTANT:*** Weber, Hayes, and Associates 120 Westgate Dr Watsonville, CA 95076 ***PHONE:*** (831) 722-3580
OWNER: Judy Cox 21389 Boyle Rd Palo Cedro, CA 96703 ***PHONE:*** (831) 728-2520	***DRILLER:*** Exploration Geo 1535 Industrial Ave San Jose, CA 95122 ***LICENSE #: C-57*** 484288 ***PHONE:*** (408) 280-6822

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DATE ISSUED: 5/10/06 ***EXPIRATION DATE:*** 5/10/07

ISSUED BY: _____

Bruce Welden, REHS, REA
Supervising Hazardous Materials Specialist

(Rev. 1/04)

MONTEREY COUNTY HEALTH DEPARTMENT
DIVISION OF ENVIRONMENTAL HEALTH
A CERTIFIED UNIFIED PROGRAM AGENCY
• 1270 Natividad Rd., Room B 301, Salinas CA 93906 (831) 755-4511

MONITORING WELL PERMIT

PERMIT NO: HZ-2036 MW-3

(MCEH use only: **SR0001187**)

☒-MONITORING WELL ☐-CONSTRUCTION

☐-VAPOR EXTRACTION WELL ☒-DESTRUCTION

SITE LOCATION: *496 Salinas Road, Pajaro CA*

APN #: *117-271-010*

SITE CONTACT PERSON: Judy Cox/Nigel Madison ***PHONE:*** (831) 728-2520	***CONSULTANT:*** Weber, Hayes, and Associates 120 Westgate Dr Watsonville, CA 95076 ***PHONE:*** (831) 722-3580
OWNER: Judy Cox 21389 Boyle Rd Palo Cedro, CA 96703 ***PHONE:*** (831) 728-2520	***DRILLER:*** Exploration Geo 1535 Industrial Ave San Jose, CA 95122 ***LICENSE #: C-57*** 484288 ***PHONE:*** (408) 280-6822

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DATE ISSUED: 5/10/06 ***EXPIRATION DATE:*** 5/10/07

ISSUED BY:

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(Rev. 1/04)

MONTEREY COUNTY HEALTH DEPARTMENT
DIVISION OF ENVIRONMENTAL HEALTH
A CERTIFIED UNIFIED PROGRAM AGENCY
• 1270 Natividad Rd., Room B 301, Salinas CA 93906 (831) 755-4511

MONITORING WELL PERMIT

PERMIT NO: HZ-2037 MW-4

(MCEH use only: **SR0001187**)

☒-MONITORING WELL ☐-CONSTRUCTION

☐-VAPOR EXTRACTION WELL ☒-DESTRUCTION

SITE LOCATION: *496 Salinas Road, Pajaro CA*
APN #: *117-271-010*

SITE CONTACT PERSON: Judy Cox/Nigel Madison ***PHONE:*** (831) 728-2520	***CONSULTANT:*** Weber, Hayes, and Associates 120 Westgate Dr Watsonville, CA 95076 ***PHONE:*** (831) 722-3580
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DATE ISSUED: 5/10/06 ***EXPIRATION DATE:*** 5/10/07

ISSUED BY:

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(Rev. 1/04)

APPENDIX B

Well Destruction Field Sheets

Weber, Hayes & Associates
Hydrogeology and Environmental Engineering
120 Westgate Dr., Watsonville, CA 95076
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Fax: (831) 722-1159

INDICATE ATTACHMENTS THAT APPLY
- ___ Site Map
- ___ Data Sheets
- ___ Geologic Logs
- ___ Photo Sheets
- ___ COC's
- ___ Chargeable Materials

Client:	C&N Tractors			Date: 5/22/06
Site Location:	496 Salinas Road, Watsonville, CA			Job #: 22029.Q
Field Tasks:	☐ Drilling	☐ Sampling	☒ Other (see below):	Weather Conditions:
Well Destruction by Pressure Grout & Drill Out				CLEAR / WARM
Personnel / Company On-Site:	Josh Hannaleck (Weber, Hayes and Associates: WHA)			

Arrive onsite to perform well destructions: 0810

County Inspector called on May 2006 for notification

County inspector (ROBERT FERNANDEZ) GAVE PERMISSION TO PROCEED/ WELL DESTRUCTION. He will visit site to inspect.

Obtain depth to groundwater measurements for each well and record below (All vapor wells screened above water table):

Location	DTW (BTOC)
MW-1	4.88'
MW-2	5.23'
MW-3	4.85'
MW-4	5.93'

Location	Original Completion Depth	Measured Completion Depth (BTOC)
MW-1	14'	14.04'
MW-2	20'	19.38'
MW-3	19'	18.82'
MW-4	20'	19.50'

0850 DRILL OUT MW-3 FIRST + GROUT BORE HOLE

PRESSURE GROUT MW-4

0932 MOB TO MW-1 TO DRILL OUT → CASING IS STANDARD 2" SCH PVC PIPE W/ GLUE COUPLINGS
↳ DOESN'T APPEAR TO HAVE SAND PACK
→ SLOTS APPEAR TO BE "HOMEMADE"
→ SLIGHT ODOR FROM CLAY FROM WELL DRILL OUT

PRESSURE GROUT MW-2

1040 SAMPLE SOIL (S-1) + CONTAINERIZE SOIL CUTTINGS IN ONSITE DRUM

1050 CLEAN UP

1107 SIGN EXPLO GEO TAG → LEAVE SITE

DISPOSE OF DRILLED OUT CASING + DEBRIS ON-SITE

↳ INFORM NIGEL (C+N) WORK COMPLETE

1114 → ROBERT FERNANDEZ (LVMG) ← WELL DESTRUCTION COMPLETE

1115 LEAVE SITE

Neat Cement Grout Seal Calculations:

Calculate the volume of sealing material needed to seal each well and record using the following equation: $V = \pi r^2 L$

Where πr^2 equals (depneding on diameter of casing):**(3/4")=3.1x10-3 ft², (2")=0.02 ft², (3")=0.05 ft², (4")=0.08 ft², (6")=0.196 ft²**; and L=well depth (ft).

Porosity of Filter Pack is approximately 40% or 0.40 times the diameter of annular space. Consider an 8" diameter boring (annular pore space volume depentent on casing diameter); Pore space volume equals:**(2")=0.132 ft² x L, (3")=0.119 ft² x L, and (4")=0.107 ft² x L**, and L=depth of seal (ft) - well depth(ft).

Cosider a 12" diameter boring for 4" wells; Pore space volume equals:**(4")=0.282 ft² x L**, and L=depth of seal (ft) - well depth(ft).

Conversion: **1ft³ = 7.4805 gallons.**

MW-1	DRILL OUT (~8" DIA.) = 2.61 GAL/FT * 14.04' ≈ 36 GALLONS
MW-2	$V = (0.02 ft^2 * 19.38 ft) + (0.132 ft^2 * 15.38 ft) = 0.39 ft^3 + 2.00 ft^3 = 2.39 ft^3 * 7.4805 GAL/ft^3 = 17.88 GAL$
MW-3	DRILL OUT (~8" DIA.) = 2.61 GAL/FT * 18.82' ≈ 49 GALLONS
MW-4	$V = (0.02 ft^2 * 19.50 ft) + (0.132 ft^2 * 15.50 ft) = 0.39 ft^3 + 2.046 ft^3 = 2,436 ft^3 \times 7.4805 GAL/ft^3 = 18.22 GAL$

Confirm that each well is completely sealed with no bridging of the sealing material. Record the amount of sealing material used to seal each well.

MW-1	APPROXIMATELY 32 GALLONS OF NEAT CEMENT USED ≈ 23 * 47# BAGS PORTLAND CEMENT (SOME SLOUGH)
MW-2	APPROXIMATELY 18 GALLONS OF NEAT CEMENT USED ≈ 12 * 47# BAGS PORTLAND CEMENT
MW-3	APPROXIMATELY 35 GALLONS OF NEAT CEMENT USED ≈ 23 * 47# BAGS PORTLAND CEMENT (SOME SLOUGH)
MW-4	APPROXIMATELY 18 GALLONS OF NEAT CEMENT USED ≈ 12 * 47# BAGS PORTLAND CEMENT

Comments:

5/22/06

Signature of Field Personel & Date